

Work Order ID 160120

Friday, April 21, 2017 11:46:35 AM

160120

Page 1

Item ID: D4777-1 Accept ***N900040100*** Setup Start ***NS1***
Revision ID: Stop ***NS2***
Item Name: Rod End Bearing
Start Date: 4/24/2017 Start Qty: 15.00 ***15*** Cust Item ID:
Required Date: 5/8/2017 Req'd Qty: 15.00 ***15*** Customer:
Reference: SCHEDULED

Approvals: Process Plan: DAS 21 9-89 Date: APR 21 2017 Tooling: _____ Date: _____ Run Start ***NR1***
QC: _____ Date: _____ SPC (Y/N): _____ Date: _____ Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
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Draw Nbr	Revision Nbr
D4777	A

100	PURCHASING	0.00				<u>15</u>	<u>APR 25 2017</u>	<u>DAS 13 9-89</u>
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100

Purchasing

Purchasing

Memo

Issue P/O: 36069

Purchase Part Number: 59915K274 Supplier: Mc Master Carr or CTG
Certificate of conformity is required

110	Receive & Inspect for Damage & Mat'l Certs	0.00						
110								
Packaging	Memo	0.30						
Packaging	Ensure certificate of conformity is attached							

110

Packaging

Packaging

Memo

Ensure certificate of conformity is attached

120	QC6- Inspect dimensions to drawing	0.00						
120								
QC	Memo	0.00						

120

QC

Quality Control

Memo

15 APR 28 2017
DAS 38 9-89

15x80174-27

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date : _____		Step #: _____		QTY Effective : _____			MRB (QSI042) Approval Completed By Lead hand / Supervisor Approval Verification QC / QA Coordinator Approval		
Description Work Order Deviation				Disposition					
Root Cause Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐ No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐		FAULT CATEGORY Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐ Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐		Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Mislabelled ☐ Fit/Function ☐ Misaligned/off center ☐ Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐					
OTHER : _____									

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Page 2

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Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____ Run Start ***NR1***
QC: _____ Date: _____ SPC (Y/N): _____ Date: _____ Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
130	Identify as per dwg & Stock Location: <u>5/25</u>	0.00							
130									
Packaging	Memo	0.15				<u>15</u>			DAS 6 9-89
Packaging									
140	QC21- Final Inspection - Work Order Release	0.00							
140									
QC	Memo	1.50							17/5/1 
Quality Control									

DAS
21
9-89

MAY 01 2017

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date :		Step #:		QTY Effective :			MRB (QSI042) Approval 		
Description Work Order Deviation				Disposition					
				Completed By					
				Lead hand / Supervisor Approval Verification					
				QC / QA Coordinator Approval					

Root Cause				FAULT CATEGORY			
Environment ☐	☐ No Re-verification	☐ Pressure/Forced	☐ Temperature/Cure	☐ Power Loss/Surge	☐ Positioned Wrong		
Design ☐	☐ Operator	☐ Bending	☐ Set-up	☐ Folio/Program	☐ Outside Dimensions		
Doc/Data ☐	☐ Offset/Setup	☐ Centre Not Concentric	☐ BOM/Route	☐ Grain	☐ Over/Under tolerance		
Equip/Tooling ☐	☐ Supplier	☐ Cracks	☐ Broken/Damage/Defect	☐ Weld	☐ Part Incorrect		
Handling/Pre ☐	☐ Training	☐ Crimp/Kink/Ripple/Wave	☐ Inspection Incomplete/Unqualified	☐ Wrong Stock Pulled	☐ Part Lost/Missing		
Material ☐	☐ Use for Testing	☐ Cuffs	☐ Contamination	☐ Out of Sequence	☐ Part Moved		
Internal Transport ☐	☐ Poor Information	☐ Crushing	☐ Countersink	☐ Off-set	☐ Drawing		
Tribal Knowledge ☐	☐ Rushing	☐ Heat Treat	☐ Cut Too Short	☐ Mislabelled	☐ Finish		
LOA ☐	☐ Product Improvement	☐ Wave/Twist in Tube	☐ Instructions Incomplete/Unclear	☐ Fit/Function	☐ Misread		
Substation ☐	☐ Process Improvement	☐ Marks/Chatter	☐ Drill Holes	☐ Misaligned/off center	☐ Turning Sequence		
Past Expiry Date ☐	☐ Manufacturing Process	OTHER : _____					
Misidentified ☐	☐ Past Due						

Picklist Print

Friday, April 21, 2017 11:46:38 AM

Page 1

Work Order ID: 160120

160120

Parent Item: D4777-1

D4777-1

Parent Item Name: Rod End Bearing

Start Date: 4/24/2017

Required Date: 5/8/2017

Start Qty: 15.00

Required Qty: 15.00

Comments: IPP REV:A 12.10.03 NEW ISSUE DD VERF:JFS

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
---------------------------------	------------------------	---------------	-------------	---------------------	------------------	-----------------	--------------------	----------------	-------------	--------------	---------------	----------------	--------

59915K274

Purchased

No

110

Each

0.0000

1

15

59915K274

Rod End Bearing

ExSPIT-427.

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

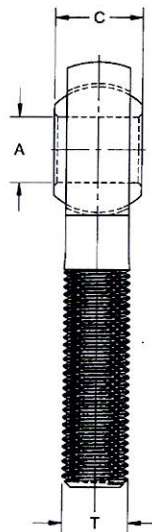
Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐			
Date : _____	Step #: _____	QTY Effective : _____		MRB (QSI042) Approval	
Description Work Order Deviation			Disposition		
			Completed By		
			Lead hand / Supervisor Approval Verification		
			QC / QA Coordinator Approval		

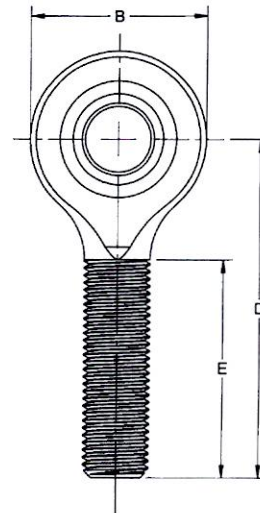
Root Cause				FAULT CATEGORY			
Environment ☐	No Re-verification ☐	Pressure/Forced ☐	Temperature/Cure ☐	Power Loss/Surge ☐	Positioned Wrong ☐		
Design ☐	Operator ☐	Bending ☐	Set-up ☐	Folio/Program ☐	Outside Dimensions ☐		
Doc/Data ☐	Offset/Setup ☐	Centre Not Concentric ☐	BOM/Route ☐	Grain ☐	Over/Under tolerance ☐		
Equip/Tooling ☐	Supplier ☐	Cracks ☐	Broken/Damage/Defect ☐	Weld ☐	Part Incorrect ☐		
Handling/Pre ☐	Training ☐	Crimp/Kink/Ripple/Wave ☐	Inspection Incomplete/Unqualified ☐	Wrong Stock Pulled ☐	Part Lost/Missing ☐		
Material ☐	Use for Testing ☐	Cuffs ☐	Contamination ☐	Out of Sequence ☐	Part Moved ☐		
Internal Transport ☐	Poor Information ☐	Crushing ☐	Countersink ☐	Off-set ☐	Drawing ☐		
Tribal Knowledge ☐	Rushing ☐	Heat Treat ☐	Cut Too Short ☐	Mislabeled ☐	Finish ☐		
LOA ☐	Product Improvement ☐	Wave/Twist in Tube ☐	Instructions Incomplete/Unclear ☐	Fit/Function ☐	Misread ☐		
Substation ☐	Process Improvement ☐	Marks/Chatter ☐	Drill Holes ☐	Misaligned/off center ☐	Turning Sequence ☐		
Past Expiry Date ☐	Manufacturing Process ☐	OTHER : _____					
Misidentified ☐	Past Due ☐						

SPECIFICATION CONTROL DRAWING

SHOP COPY
RETURN TO
ENGINEERING
UNCONTROLLED COPY
SUBJECT TO AMENDMENT
WITHOUT NOTICE
WORK ORDER
NO. 160120 MJS
170421



ROD END BEARING



DART P/N	HOUSING MATERIAL	A	B	C	D	E	T (THREAD SIZE)	SUGGESTED SUPPLIER	SUGGESTED SUPPLIER P/N
D4777-1	STAINLESS STEEL	Ø 0.38	1.00	0.500	1.94	1.25	3/8-24 (RIGHT HAND)	MC MASTER CARR	59915K274

RELEASED
2013-08-14

A		NEW ISSUE		AJS		13.08.08	
REV.		DESCRIPTION		BY		DATE	
DESIGN	AJS	DART AEROSPACE LTD					
DRAWN	AJS	HAWKESBURY, ONTARIO, CANADA					
CHECKED	<i>[Signature]</i>	DRAWING NO.		REV. A			
MFG. APPR.	<i>[Signature]</i>	D4777		SHEET 1 OF 1			
APPROVED	<i>[Signature]</i>	TITLE		SCALE			
DE APPR.	<i>[Signature]</i>	ROD END BEARING		NTS			
DATE		13.08.08		COPYRIGHT © 2013 BY DART AEROSPACE LTD THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.			

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date : _____		Step #: _____		QTY Effective : _____			MRB (QSI042) Approval 		
Description Work Order Deviation				Disposition					
							Completed By		
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							QC / QA Coordinator Approval		

Root Cause			FAULT CATEGORY		
Environment ☐	No Re-verification ☐	Pressure/Forced ☐	Temperature/Cure ☐	Power Loss/Surge ☐	Positioned Wrong ☐
Design ☐	Operator ☐	Bending ☐	Set-up ☐	Folio/Program ☐	Outside Dimensions ☐
Doc/Data ☐	Offset/Setup ☐	Centre Not Concentric ☐	BOM/Route ☐	Grain ☐	Over/Under tolerance ☐
Equip/Tooling ☐	Supplier ☐	Cracks ☐	Broken/Damage/Defect ☐	Weld ☐	Part Incorrect ☐
Handling/Pre ☐	Training ☐	Crimp/Kink/Ripple/Wave ☐	Inspection Incomplete/Unqualified ☐	Wrong Stock Pulled ☐	Part Lost/Missing ☐
Material ☐	Use for Testing ☐	Cuffs ☐	Contamination ☐	Out of Sequence ☐	Part Moved ☐
Internal Transport ☐	Poor Information ☐	Crushing ☐	Countersink ☐	Off-set ☐	Drawing ☐
Tribal Knowledge ☐	Rushing ☐	Heat Treat ☐	Cut Too Short ☐	Mislabeled ☐	Finish ☐
LOA ☐	Product Improvement ☐	Wave/Twist in Tube ☐	Instructions Incomplete/Unclear ☐	Fit/Function ☐	Misread ☐
Substation ☐	Process Improvement ☐	Marks/Chatter ☐	Drill Holes ☐	Misaligned/off center ☐	Turning Sequence ☐
Past Expiry Date ☐	Manufacturing Process ☐	OTHER : _____			
Misidentified ☐	Past Due ☐				



Dart Aerospace Ltd.
1270 Aberdeen Street
Hawkesbury, ON K6A 1K7
Tel: 613 632 9577
Fax: 613 632 1053

PURCHASE ORDER

Purchase Order ID **PO36069**

Purchase Order Date 4/25/2017

PO Print Date 4/25/2017

Page Number 3 of 8

Order From :

MCMaster-CARR SUPPLY CO,
P.O. BOX 7690
CHICAGO, IL 60680-7690
US

VU-MCM001

Ship To : DART AEROSPACE LTD
1270 ABERDEEN
HAWKESBURY, ON K6A 1K7
CANADA

Contact Name

Vendor Phone

330 995 5500

Ship To Contact

Ship To Phone

Ship Via:

Purolator ground ppd

Ship Acct:

59915K274

AS PER DWG D4777 REV. A
B160120

DAS
38
9-89

Rod End Bearing

4/27/2017

Yes

4/27/2017

15.00

Each

\$19.05

\$285.75

Line Total:

\$285.75

7 50715K676

FLARED TUBE FITTING
SS

4/27/2017 FN

16.00

\$8.27

\$132.32

Yes

Each

4/27/2017

AS PER DWG D5530 REV. A4
B160269

Line Total:

\$132.32

8 6541K38

Ear Clamp

4/27/2017 FN

25.00

\$0.38

\$9.58

Yes

Each

4/27/2017

AS PER DWG D5529 REV. A4
B160268

Line Total:

\$9.58

Note:

4/25/2017



200 Aurora Industrial Pkwy
Aurora OH 44202-8087
330-995-5500
cle.sales@mcmaster.com

Dart Aerospace Ltd
1270 Aberdeen St
Hawkesbury ON K6A 1K7
Canada

Purchase Order
PO36069

Order Placed By
Chantal Lavoie

McMaster-Carr Number
2390118-04

Page 1 of 2

04/25/2017

Line	Product	Ordered	Shipped
1	90130A030 Weather-Resistant EPDM Rubber Sealing Washer for 5/16" Screw Size, 0.29" ID, 0.562" OD, Packs of 100	10 Packs	10
4	95606A170 Nylon Plastic Washer for 7/16" Screw Size, 0.5" ID, 0.683" OD, Off-White, Packs of 100	1 Pack	1
5	93695K58 Oil-Resistant Fire-Retardant Blended Buna-N Foam 50 Feet Adhesive-Back Strip, 1/4" Thick, 1" Wide	1 Each	1
6	59915K274 PTFE-Lined Stainless Steel Ball Joint Rod End 3/8"-24 RH Male Shank, 3/8" Ball ID, 1-1/4" Long Thread	15 Each	15
7	50715K676 Type 316 Stainless Steel 37 Degree Flared Tube Fitting Adapter for 1/4" Tube OD x 7/16"-20 UNF Male	16 Each	16
8	6541K38 Vibration-Resistant Zinc-Plated Steel Double Pinch Clamps 31/64" to 19/32" ID, for Firm Hose and Tube, Packs of 25	1 Pack	1
9	6519T14 Ultra-Chemical-Resistant Versilon PVC Tubing 3/8" ID, 9/16" OD	16 Feet	16
10	46595A36 Backup Pad for Hook and Loop Disc for 5" Disc Diameter, 5/16"-24 Threaded Spindle, Deliver To Carl	1 Each	1
11	2584A33 General Purpose Left-Hand Tap for Through-Hole Threading, 1/4"-28 Thread Size, Deliver To Eric L	1 Each	1
12	2600A16 General Purpose Die UNF Left-Hand Thread, 1" OD, 1/4"-28 Thread Size, Deliver To Eric L	1 Each	1
13	4168A611 High Performance Sanding Belt for Stainless Steel and Hard Metals, 40 Grit, 3/4" Wide, 20-1/2" Long, Deliver To Eric L	30 Each	30
16	1505K94 Miniature Light Bulb Miniature-Bayonet Base, Push-In, Trade Number 1819, Packs of 10, Deliver To Luc	1 Pack	1
17	2757A22 Cutting Wheel for Tube and Pipe Cutter Ridgid 10, 15, and 20, for Tubing, Deliver To Luc	4 Each	4
18	8647A22 Mitutoyo Standard Electronic Caliper 500-197-30, 0-8" (0-200mm) Range, Deliver To Eric D	1 Each	1
19	5812A13 13 Piece Hex L-Key Set, Same As 7158A5 / Deliver To Jesse	2 Each	2
20	69485A21 9 Piece Metric Hex L-Key Set, Deliver To Jesse	2 Each	2

8017-4-27

DAS
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9-89

Shipped separately from our Chicago warehouse on 04/25

2	9776K131 1" Wide x 50' Long Loop, Adhesive Back, Beige	5 Each	5
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McMaster-Carr Supply Company
200 Aurora Industrial Pkwy
Aurora, OH 44202-8087 USA
Phone: 330-995-5500 Fax: 330-995-9600
E-Mail: cle.sales@mcmaster.com
Employer Identification Number (EIN): 36-1458720

Invoice: 25939851
Purchase Order: PO36069
Release:
McMaster-Carr Number: 2390118-04

ORIGINAL COMMERCIAL
INVOICE
CERTIFICATE OF ORIGIN

Ultimate Destination:
Dart Aerospace Ltd
1270 Aberdeen St
Hawkesbury ON K6A 1K7
Canada

Shipped: 25-Apr-2017 FOB: ORIGIN

Shipper's Export Declaration (SED):
NO EEI 30.36

Intermediate Consignee:

Bill To:
Dart Aerospace Ltd
1270 Aberdeen St
Hawkesbury ON K6A 1K7
Canada

Tax Number:

Forwarding Agent:

Billing
Attention:

Shipping
Attention:

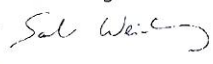
Contact:

Line	Description	Qty & Unit	Unit Price	Extension
1	90130A030 Weather-Resistant EPDM Rubber Sealing Washer for 5/16" Screw Size, 0.29" ID, 0.562" OD, Packs of 100 Country of Origin: United States Schedule B #: 401693 ECCN #: EAR99 NLR	10 PK	\$10.81	\$108.10
4	95606A170 Nylon Plastic Washer for 7/16" Screw Size, 0.5" ID, 0.688" OD, Off-White, Packs of 100 Country of Origin: United States Schedule B #: 392690 ECCN #: EAR99 NLR	1 PK	\$8.60	\$8.60
5	93695K58 Oil-Resistant Fire-Retardant Blended Buna-N Foam 50 Feet Adhesive-Back Strip, 1/4" Thick, 1" Wide Country of Origin: United States Schedule B #: 400811 ECCN #: EAR99 NLR	1 EA	\$16.15	\$16.15
6	59915K274 PTFE-Lined Stainless Steel Ball Joint Rod End 3/8"-24 RH Male Shank, 3/8" Ball ID, 1-1/4" Long Thread Country of Origin: United States Schedule B #: 848330 ECCN #: EAR99 NLR	15 EA	\$19.05	\$285.75

DAS
38
9-89

SP74-27

Your order is subject only to our terms and conditions, available at www.mcmaster.com or from our Sales Department.

Shipping Weight (in kgs): 7	Number of Packages: 1	Invoice Amounts:	Merchandise Amount: \$1,020.99 Canadian GST/HST: \$135.04 Shipping Charges: \$17.66 Total (In USD): \$1,173.69
Package Dimensions: 44 X 44 X 32 CM = .063 CUBIC M		Payment Terms: 2% discount on merchandise only if paid within 10 days, net 30 days	
Authorized Signature: 	Date: 25-Apr-2017	Remit payment to: (by mail) McMaster-Carr Supply Company PO Box 7690 Chicago, IL 60680-7690 USA	(by wire transfer) Bank of America 222 Broadway New York, NY 10038 Account 86666-02021 SWIFT BOFAUS3N
Name: Sarah Weinberg	Title: Operations Mgr.		Page 1 of 3